

REMARKS

The present amendment is responsive to the Office Action of October 28, 2004. Reference is made to the interview between the Examiner and the attorney for Applicant on October 27, 2004. which related to possible claim changes, presenting the substance of the claims in the specification, and the matter of property difference between Applicant's disclosure and the cited references.

The allowance of Claims 3, 9, 10, 12, 24, 26, 30 and 31, is noted with appreciation.

Claims 1, 2, 5 and 21 were rejected under 35 USC 102 on Fyles, et al, U.S. Patent 5,962,354. Claims 1, 2 and 21 were rejected under 35 USC 102 on Chvalovsky et al, U.S. Patent 3,854,986. Claims 1, 2, 8 and 21 were rejected under 35 USC 102 on Rapp, et al, U.S. Patent 5,576,252.

In each of the rejections, the Examiner has commented that the compositional ranges specified in the references are sufficiently specific to anticipate compositional limitations in the identified claims, referring to Fyles Claims 1, 2, 5 and 21, Chvalovsky Claims 1, 2 and 21, and Rapp Claims 1, 2, 8 and 21.

The claimed combinations generally relate to fibers of .5 to 5 microns diameters, and in practice relate to fibers no larger than 1.5 microns. Such fibers in fire-blocking blankets, as in aircraft, protect against very high temperatures, typically for several hours. In addition to withstanding very high temperatures, the claimed compositions comprise fibers which also withstand very low temperatures and provide outstanding noise damping acoustical properties, such being inherent properties in the claimed combinations. Fibers according to the invention serve to prevent burn-through of insulation blankets containing the fibers. A much higher range of temperatures are thus involved for advanced uses, as in aircraft to prevent fire reaching persons aboard an airliner or other aircraft, for hours, as now required by the new FAA Directive 14 CFR Parts 25.81 etc.

Compositions according to the present invention, with fiber diameters dimensions such as .7 to 1.5 microns provide greatly increased resistance to high temperatures, provides outstanding insulation and acoustic values and constitute a distinct property difference relative to the three cited references. Typically, the fibers utilized are 0.5 to 5 microns in diameter. Fire-blocking blankets with such fibers protect for hours against temperatures of 2,200°F.

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In addition to providing burn-through insulation blankets, fibers according to the invention also provide a superior insulation for high and low temperature applications.

Commencing in 1978, relevant research and experimentation, etc. by Applicant, continued intermittently for some years, and was accelerated when major representatives of the aircraft industry asked that the Applicant herein and his company, Glass Incorporated, endeavor to develop improved glass fibers for use in aircraft fire-blocking blankets for aircraft, typically commercial passenger aircraft.

Accompanying the present amendment is a Declaration of applicant Albert Lewis relative to extensive experimentation done over a period of time and in support of the present invention constituting a property difference relative to the prior art.

The cited references compositions, singly or combined, do not at all provide any capability of withstanding the very high temperature which Applicant's claimed combinations withstand for substantial periods of time, as when installed in blankets in an aircraft to prevent heat and fire from passing

therethrough and thus reach persons aboard. The small diameter fibers according to the invention withstand such temperatures for long periods of time and provide the other properties as now required by the aircraft industry and the FAA.

The cited references do not disclose or suggest Applicant's combinations of ingredients or the fibers diameters which withstand the very high temperatures and meet the other requirements of fibers provided by the fibers according to the claimed invention. An important purpose is to withstand the high temperatures involved in fire aboard aircraft, such as airliners, to provide a fire barrier to protect persons against the high temperatures and fire.

The cited references relate to compositions for entirely different respective purposes than those of Applicant's claimed invention. In contrast with Applicant's claimed compositions, the cited references Fyles, Rapp and Chvalovsky involve quite coarse fibers for such purposes as providing relatively inexpensive insulation for homes and other structures. The respective compositions of the Fyles, Rapp and Chvalovsky

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references would not make possible or at least would make very difficult any fiberizing at any temperature mentioned in the Fyles patent or the other two cited patents. The forming temperatures with Applicant's combinations, exceeds 1,400°C which is much higher than any forming temperatures involved in the three cited references.

The present invention therefore constitutes a distinct property difference and distinction over the prior art, such as the cited patents of Fyles, Rapp and Chvalovsky. A distinct property and physical difference has been demonstrated by the results achieved by the present claimed invention.

The Abstract is amended to specify 2.0% to 26.0% alumina, to specify 0% to 10.50% magnesium oxide, and to delete the recitation of 0% to 12.0% sodium oxide, 0% to 6.0% potassium oxide, and 0% to 5.0% zirconium oxide.

The specification is amended to replace lines 9-17 on page 7 to better describe the present invention.

The specification has been amended at page 8, lines 13-24, to better define the compositional range according to the invention.

The specification has been amended in accordance with the Examiner's objection at page 10, lines 14-26, to better define the composition of Example 4 (Claim 8).

The specification has been amended at page 12, following line 13, to set forth a Table which provides literal support for the respective compositions of oxides for each of Claims 1-20.

At page 13 of the specification, lines 13-16 are amended to add further description relative to glass fibers being essentially free of certain oxides.

At page 14 of the specification, lines 4-16 are replaced with an amended paragraph to better define the compositional range.

At page 16 of the specification, lines 1-25 are amended to change the percentage of  $\text{Na}_2\text{O}$  in Example 9 (Claim 30).

In the specification at page 18, following line 10, there is set forth a Table to provide literal support for the respective compositions of each of Claims 21-35, as required in the Office Action.

In the claims, Claim 1 is amended to modify the weight percent of  $\text{Al}_2\text{O}_3$ ,  $\text{Na}_2\text{O}$ , and  $\text{K}_2\text{O}$ . Each of Claims 18, 19 and 20 are amended to delete the limitation that the blend is substantially free of  $\text{TiO}_2$ . Claim 21 is amended to specify  $\text{Al}_2\text{O}_3$  range from about 2.0 to about 12.5 weight percent, and  $\text{K}_2\text{O}$  being in an amount from about 0 to about 2.0 weight percent.

New Claims 36 through 39 are added. Claim 36 depends from Claim 1 and specifies fibers of diameters of 0.5 to 5 microns. Claim 37 depends from Claim 21 and specifies fibers of diameters of 0.5 to 5 microns. Claim 38 depends from Claim 1 and specifies fiber diameter range of 0.7 to 3.0 microns with an average of 1.5 microns. Claim 39 depends from Claim 21 and specifies fiber diameter range of 0.7 to 3 microns with an average of 1.5 microns.

All of the claims presently in the application are believed to be allowable, and allowance thereof is respectfully solicited.

It is believed and urged that the present amendment is fully responsive to the Office Action of October 28, 2004.

Applicant respectfully requests that a Notice Of Allowance  
be issued in this case.

Respectfully submitted,

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